

Laboratorio Amazon Gateway y Lambda

Repositorio GitHub: <https://github.com/Siabell/Arep-LambdaGateway/>

1. Usando Amazon Gateway y lambda crear un servicio que reciba un parámetro numérico y retorne el cuadrado del número.

- Función de retornar el cuadrado de un numero

```
1 package edu.escuelaing.arep.services;  
2  
3 public class MathServices {  
4  
5     public static Integer square(Integer i) {  
6         return i*i;  
7     }  
8  
9 }  
10
```

- Función Lambda

The screenshot displays the AWS Lambda console interface for a function named 'square'. The top navigation bar shows the AWS logo, 'Services', 'Resource Groups', and user information. The breadcrumb trail indicates the path: Lambda > Functions > square. The function's ARN is shown as 'arn:aws:lambda:us-east-1:288626512559:function:square'. Below the function name, there are tabs for 'Configuration', 'Permissions', and 'Monitoring'. The 'Configuration' tab is active, showing the 'Designer' section with a visual representation of the function's configuration. It includes a box for the function 'square' with a 'Layers' section showing '(0)'. Below this, there is a box for 'API Gateway' with an 'Add trigger' button. To the right, there is an 'Add destination' button. The 'Function code' section is visible at the bottom, showing the 'Code entry type' as 'Upload a .zip or .jar file', the 'Runtime' as 'Java 8', and the 'Handler' as 'edu.escuelaing.arep.services.Math'.

- API Gateway Get

The screenshot shows the AWS API Gateway console. The breadcrumb trail is: Amazon API Gateway > APIs > mathServices (pdwbqerx4c) > Resources > / (1wfc4x5097) > GET. The left sidebar shows the API: mathServices and its Resources. The main area is titled '/ - GET - Method Execution'. It shows a flow diagram with four boxes: Method Request, Integration Request, Method Response, and Integration Response. The flow is: Client (lightning bolt icon) -> Method Request -> Integration Request -> Lambda square (vertical bar) -> Integration Response -> Method Response -> Client. The Method Request box contains: Auth: NONE, ARN: arn:aws:execute-api:us-east-1:288626512559:pdwbqerx4c/*, Query Strings: value. The Integration Request box contains: Type: LAMBDA, Query Strings: value, Region: us-east-1. The Method Response box contains: HTTP Status: 200, Models: application/json => Empty. The Integration Response box contains: HTTP status pattern: -, Output passthrough: Yes.

The screenshot shows a web browser with the URL `pdwbqerx4c.execute-api.us-east-1.amazonaws.com/MathService?value=11`. The status bar at the bottom shows the number 121.

2. Crear una máquina virtual Linux en AWS

aws Services Resource Groups

New EC2 Experience

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
mathServerA...	i-00a9108aa383505...	t2.micro	us-east-1b	running	2/2 checks ...	None
mathServerA...	i-05be7149fe61fba54	t2.micro	us-east-1b	running	2/2 checks ...	None
i-06aee6f9d0134ba27	i-06aee6f9d0134ba27	t2.micro	us-east-1a	running	2/2 checks ...	None
mathServerA...	i-0a8cd29e5fe226dcb	t2.micro	us-east-1b	running	2/2 checks ...	None

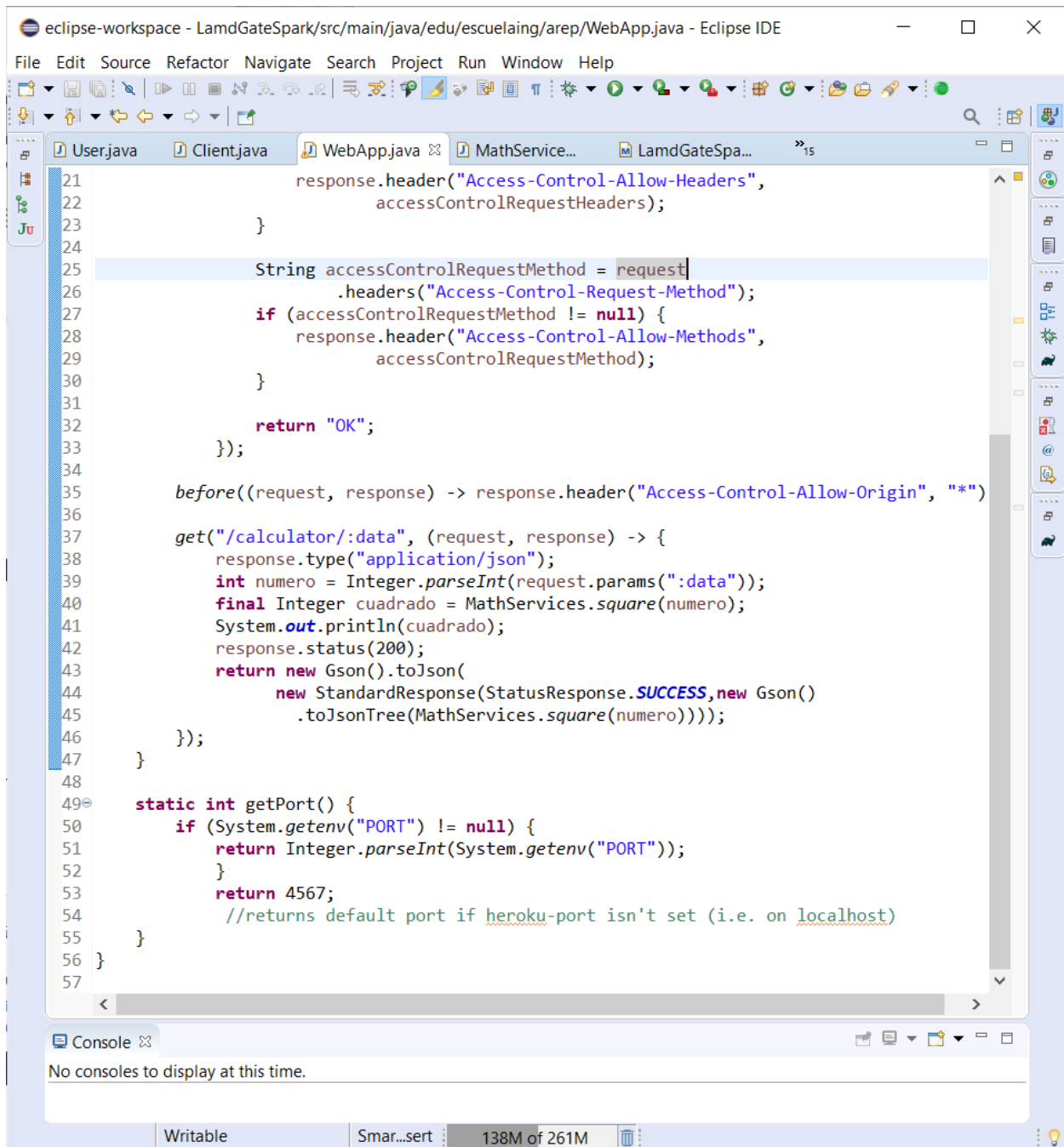
Instance: **i-06aee6f9d0134ba27** Public DNS: **ec2-54-208-35-205.compute-1.amazonaws.com**

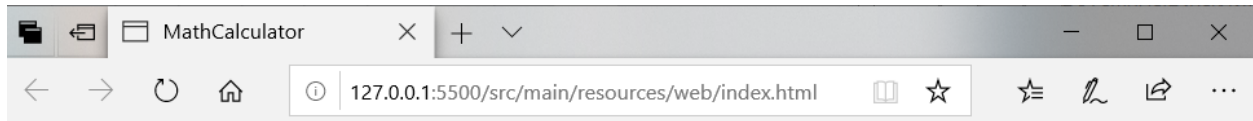
Description Status Checks Monitoring Tags

Instance ID	i-06aee6f9d0134ba27	Public DNS (IPv4)	ec2-54-208-35-205.compute-1.amazonaws.com
Instance state	running	IPv4 Public IP	54.208.35.205
Instance type	t2.micro	IPv6 IPs	-
Finding	You may not have permission to access AWS Compute Optimizer.	Elastic IPs	
Private DNS	ip-172-31-37-201.ec2.internal	Availability zone	us-east-1a
Private IPs	172.31.37.201	Security groups	launch-wizard-8. view inbound rules. view outbound rules
Secondary private IPs		Scheduled events	No scheduled events
VPC ID	vpc-58437d22	AMI ID	amzn-ami-hvm-2018.03.0.20200318.1-

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3. Crear una aplicación WEB, usando Spark, Que tenga un formulario que le pida al usuario un número y le regrese el cuadrado del mismo.





MathCalculator

Number:

Calculate

Square:

- La aplicación Web debe usar el servicio de Amazon GateWay para calcular el valor.

```
3 import java.io.*;
4 import java.net.*;
5
6 public class Client {
7
8
9     public static Integer sendGet(int number) throws Exception {
10         URL url = new URL("https://pdwbqerx4c.execute-api.us-east-1.amazonaws.com/MathService?value="+number);
11         HttpURLConnection con = (HttpURLConnection) url.openConnection();
12         con.setRequestMethod("GET");
13
14         int responseCode = con.getResponseCode();
15         if (responseCode == HttpURLConnection.HTTP_OK) { //success
16             BufferedReader in = new BufferedReader(new InputStreamReader(
17                 con.getInputStream()));
18             String inputLine;
19             StringBuffer response = new StringBuffer();
20
21             while ((inputLine = in.readLine()) != null) {
22                 response.append(inputLine);
23             }
24             in.close();
25
26             //System.out.println(response.toString());
27             String answer = response.toString();
28             Integer ans = Integer.parseInt(answer);
29             return ans;
30         } else {
31             System.out.println("Get request not worked");
32         }
33         return null;
34     }
35 }
36
37 }
38
39 }
```

Console

No consoles to display at this time.

Writable Smart Insert 23: 158M of 261M

- Desplegar en AWS (agregar las reglas de entrada).

```
ec2-user@ip-172-31-37-201:~/lab/Arep-LambdaGateway
[ec2-user@ip-172-31-37-201 ~]$ git clone https://github.com/Siabell/Arep-LambdaGateway.git
Cloning into 'Arep-LambdaGateway'...
remote: Enumerating objects: 101, done.
remote: Counting objects: 100% (101/101), done.
remote: Compressing objects: 100% (70/70), done.
remote: Total 101 (delta 6), reused 97 (delta 5), pack-reused 0
Receiving objects: 100% (101/101), 3.05 MiB | 33.92 MiB/s, done.
Resolving deltas: 100% (6/6), done.
[ec2-user@ip-172-31-37-201 ~]$ ls
Arep-LambdaGateway
[ec2-user@ip-172-31-37-201 ~]$ cd Arep-LambdaGateway/
[ec2-user@ip-172-31-37-201 Arep-LambdaGateway]$ ls
pom.xml  README.md  src  target
[ec2-user@ip-172-31-37-201 Arep-LambdaGateway]$ mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] -----
[INFO] Building LamdGateSpark 1.0-SNAPSHOT
[INFO] -----
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/
plugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/p
lugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.pom (8.1 kB at 13 k
B/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/
plugins/maven-plugins/23/maven-plugins-23.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/p
```

```
ec2-user@ip-172-31-37-201:~/lab/Arep-LambdaGateway
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 5.420 s
[INFO] Finished at: 2020-03-27T08:46:24Z
[INFO] Final Memory: 14M/34M
[INFO] -----
[ec2-user@ip-172-31-37-201 Arep-LambdaGateway]$ mvn exec:java -DexecainClass="edu.escuela
ing.arep.WebApp"
[INFO] Scanning for projects...
[INFO]
[INFO] -----
[INFO] Building LamdGateSpark 1.0-SNAPSHOT
[INFO] -----
[INFO] >>> exec-maven-plugin:1.2.1:java (default-cli) > validate @ LamdGateSpark >>>
[INFO] <<< exec-maven-plugin:1.2.1:java (default-cli) < validate @ LamdGateSpark <<<
[INFO]
[INFO] --- exec-maven-plugin:1.2.1:java (default-cli) @ LamdGateSpark ---
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
entra antes post y get
100
196
```

- Configurar la aplicación dentro de un grupo de autoescalabilidad.

Screenshot of the AWS Management Console showing the Amazon EC2 Auto Scaling console. The browser address bar shows the URL: `console.aws.amazon.com/ec2/autoscaling/home?region=us-east-1#AutoScalingGroups:id=mat...`.

The console displays a notification about the new design for Amazon EC2 Auto Scaling. Below the notification, there is a "Create Auto Scaling group" button and an "Actions" dropdown menu.

The main section shows a list of Auto Scaling groups. The first group is "mathServer-ASG" with a launch configuration of "mathServer", 3 instances, 3 desired instances, 3 minimum instances, 3 maximum instances, and an availability zone of "us-east-1b". The default cooling-off period is 300 seconds.

Below the list, the "Auto Scaling Group: mathServer-ASG" details are shown. The "Instances" tab is selected, displaying a list of instances. The instances are all in the "InService" state and "Healthy".

Instance ID	Lifecycle	Launch Configuration / Template	Availability Zone	Health Status	Protected from
i-00a9108aa3835052d	InService	mathServer	us-east-1b	Healthy	
i-05be7149fe61fba54	InService	mathServer	us-east-1b	Healthy	
i-0a8cd29e5fe226dcb	InService	mathServer	us-east-1b	Healthy	

- S3 con el formulario y js, configurado para que funcione con la máquina virtual de aws y la configuración de Cors

(7) Wi | AWS | Work | S3 x | Escuel | Cours | AREM | Assign | New Tab | +

← → ↻ s3.console.aws.amazon.com/s3/buckets/mathstore/?region=us-east-1 ☆ | V |

aws Services Resource Groups vocstartsoft/user645827=vale... Global Sup

Amazon S3 > mathstore

mathstore

Overview Properties Permissions Management Access points

🔍 Type a prefix and press Enter to search. Press ESC to clear.

📁 Upload + Create folder Download Actions ▾ US East (N. Virginia) ↻

Viewing 1 to 2

<input type="checkbox"/>	Name ▾	Last modified ▾	Size ▾	Storage class ▾
<input type="checkbox"/>	📄 app.js	Mar 27, 2020 3:49:42 AM GMT-0500	989.0 B	Standard
<input type="checkbox"/>	📄 index.html	Mar 27, 2020 3:07:06 AM GMT-0500	1.0 KB	Standard

Viewing 1 to 2

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aws

Services

Resource Groups

vocstartsoft/user645827=

Static website hosting

Endpoint : <http://mathstore.s3-website-us-east-1.amazonaws.com>

☒ Use this bucket to host a website [Learn more](#)

Index document [i](#)

Error document [i](#)

Redirection rules (optional) [i](#)

☐ Redirect requests [Learn more](#)

☐ Disable website hosting

☒ Bucket hosting

Cancel

Save

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4. Probar la aplicación WEB.

MathCalculator

Number:

Calculate

Square: 225